



Letter

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OFFICE OF PETITIONS

## UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Paul R. Johannessen

Serial No. 09/922,283

Art Unit: 3662

Filed: August 3, 2001

Examiner:

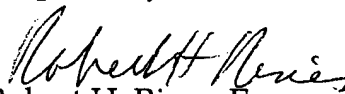
For: Method of High-Power Switching and Switch Apparatus For Frequency  
Modulation Within Loran-C Signals

Hon. Commissioner of Patents  
and Trademarks  
Washington, DC 20231

Dear Sir:

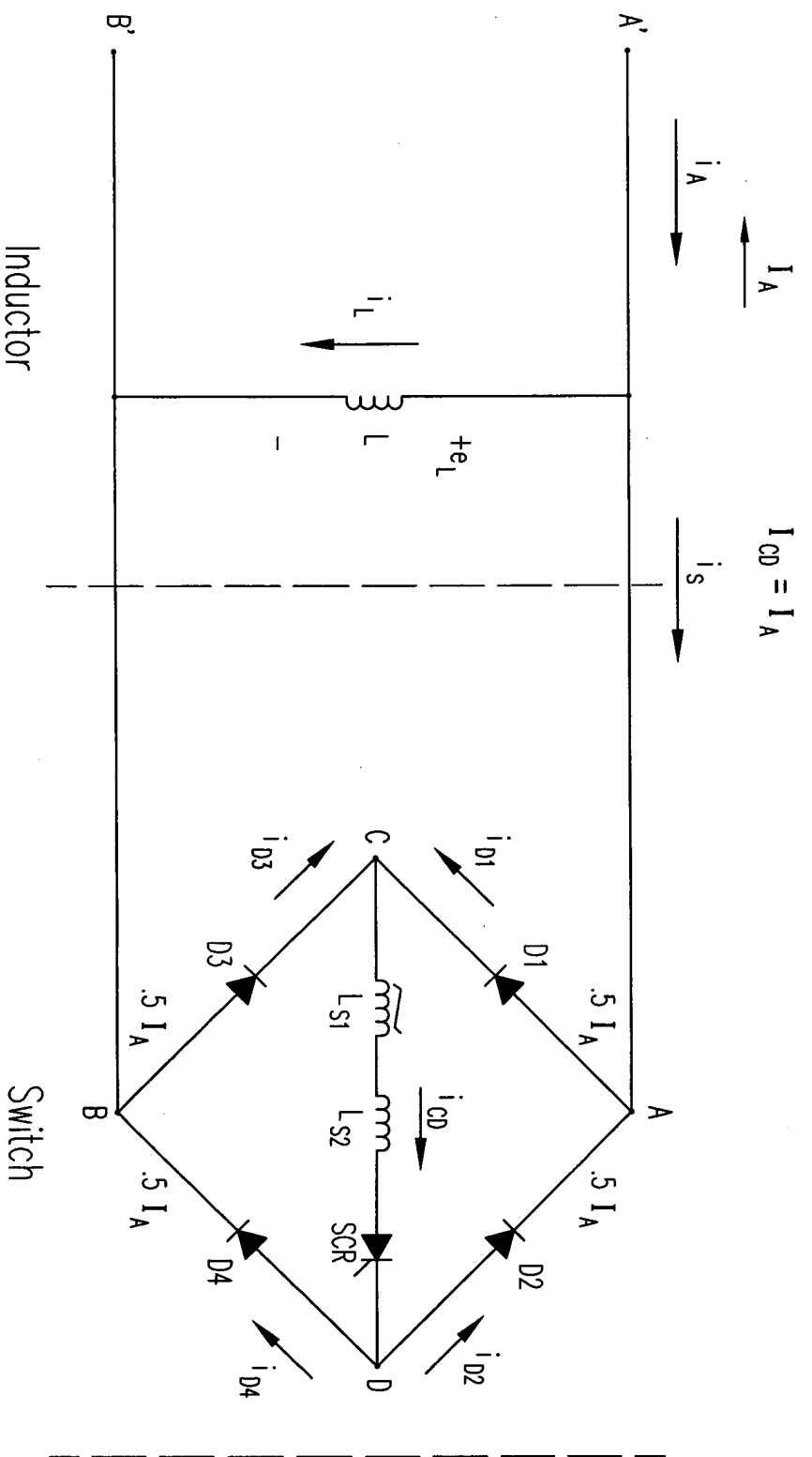
With reference to the above application, we enclose five (5) sheets of formal  
drawings for filing in the US PTO.

Respectfully submitted:

  
Robert H. Rines, Esq.,  
Reg. 15,932

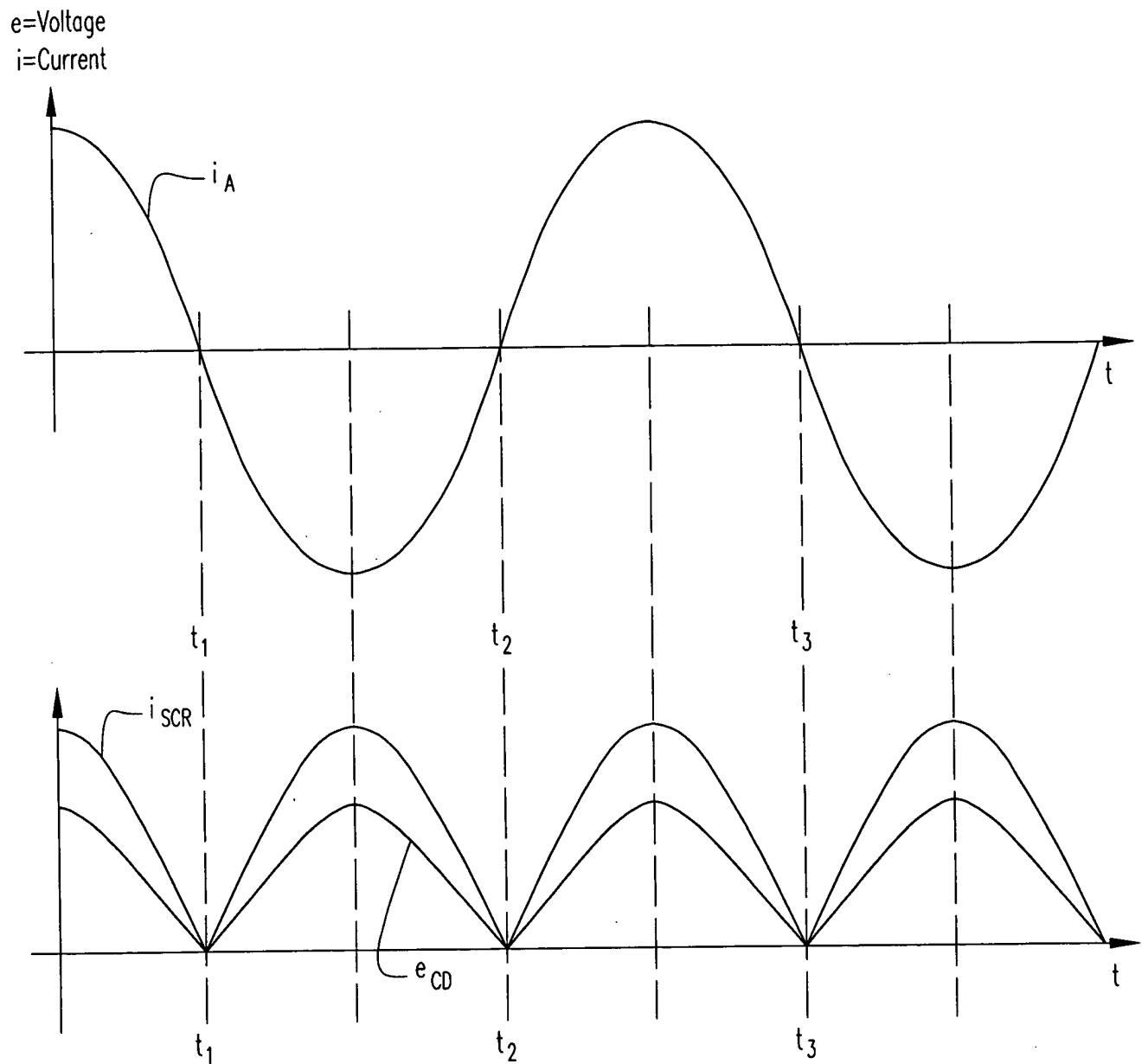
Date: November 9, 2001  
RINES & RINES  
81 North State Street  
Concord, NH 03301  
Tel (603 220-0121)  
Reg. No. 16,118

$$i_A = I_A \cos \omega_A t$$



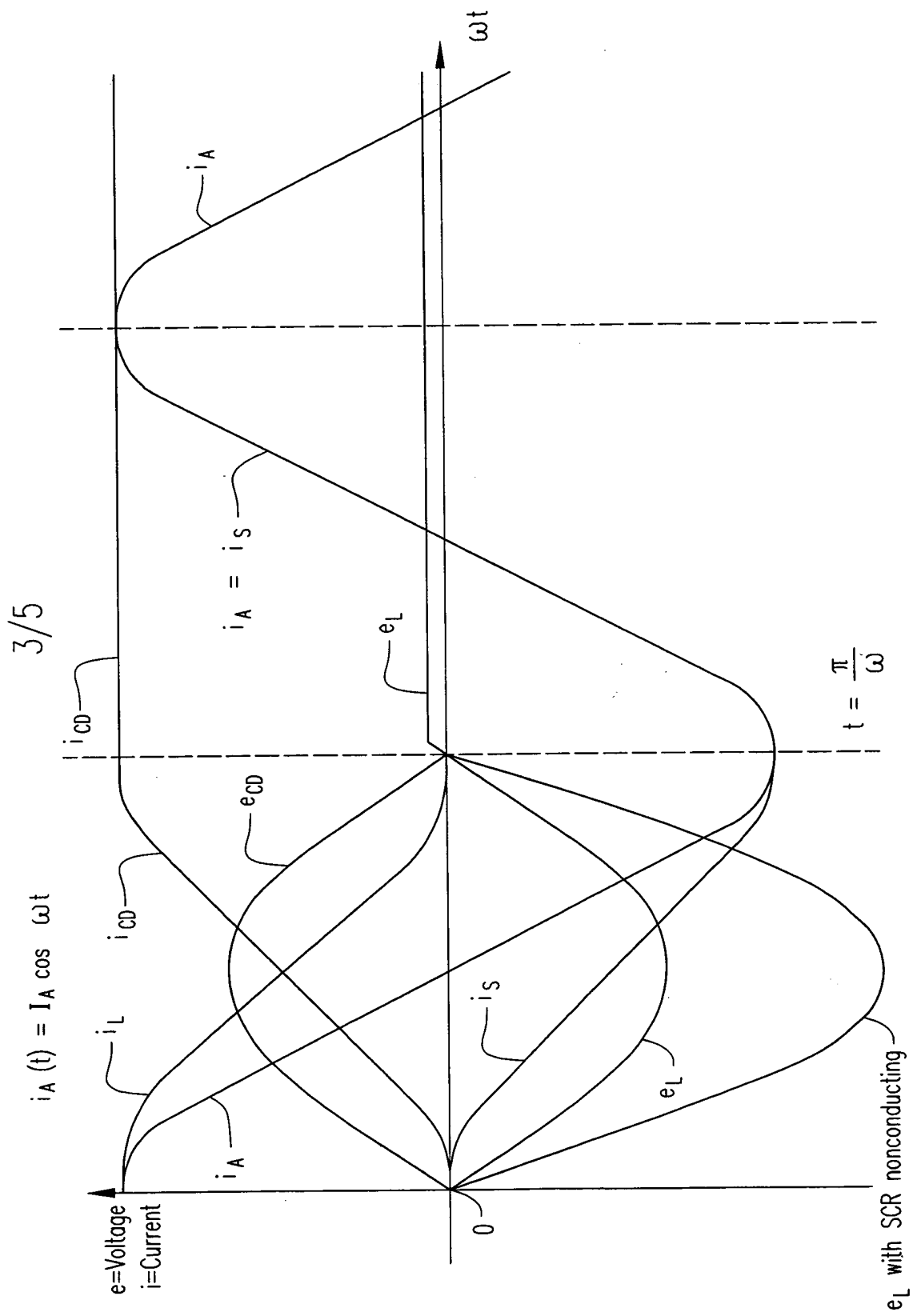
Switch Across Inductor L

FIG. 1



Switch Waveforms With Series Resistor

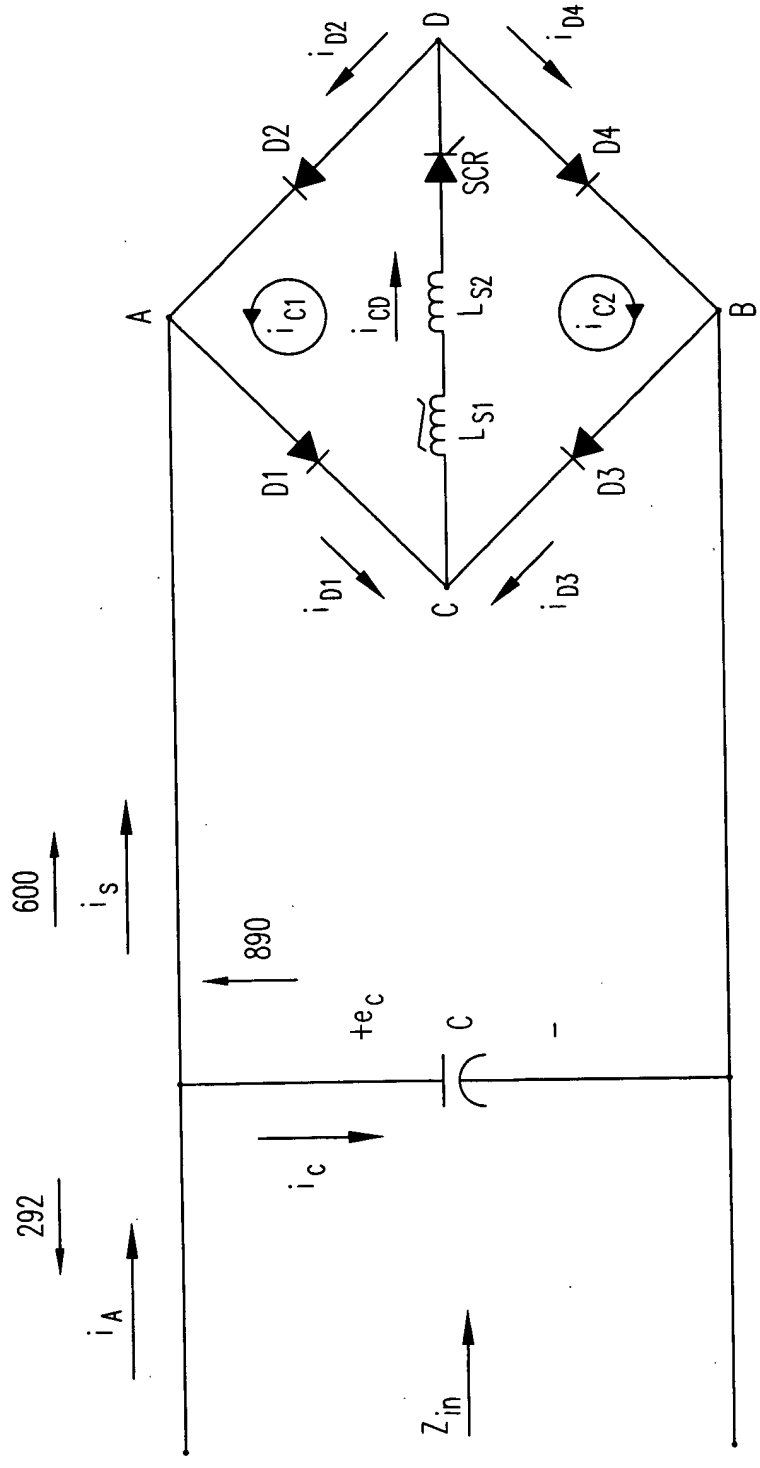
FIG. 2



Voltage and Current Waveform for Inductor Switching

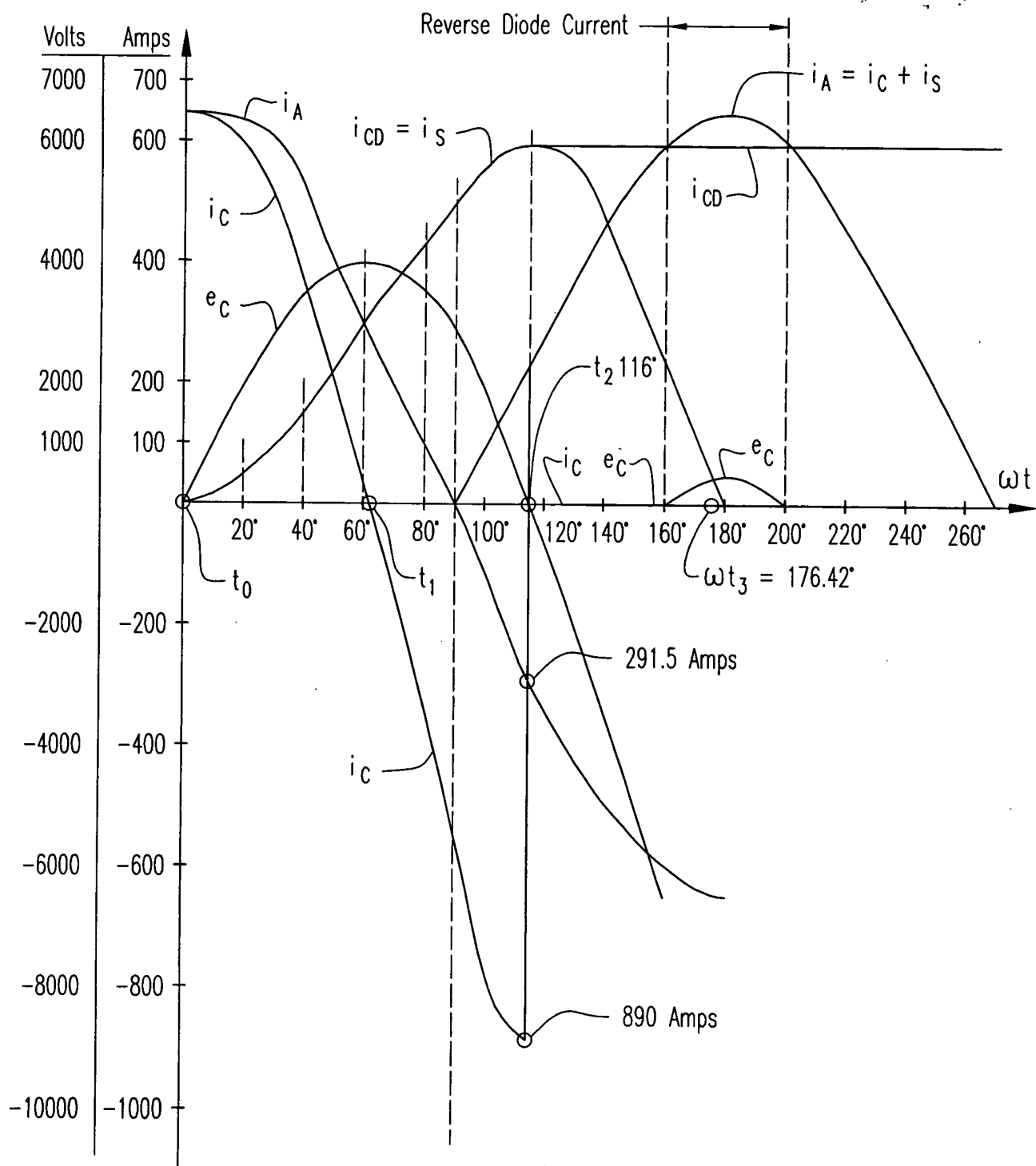
FIG. 3

$\omega t = 90^\circ$ ,  $i_A = 0$ ,  $i_{CD}$  positive,  $i_C$  negative,  $i_A = i_C + i_S$



Switch Across Series Capacitor

FIG. 4



Voltage and Current Waveform for Capacitor Switching